' Appl. No.: 10/671,165

Reply to Office Action of: 10/18/2005

The listing of claims will replace all prior versions, and listings, of claims in the

application:

Listing of Claims:

1. (currently amended) An electro-optical device capable of effecting an alteration in an

optical output in response to an electrical signal selected from modulating its amplitude,

modulating its phase and switching it, comprising a body of electro-optically active

material, waveguides for passing light through the body, and electrodes for applying an

electric field with a frequency in the microwave region to the body, the body of electro-

optically active material transverse geometry of the device-having in succession an

upstream zone, a middle zone, and a downstream zone being such as to maintain

adequate phase velocity matching between optical and microwave frequencies, the device

having a discontinuity within the downstream zone such that the direction of the electro-

optic effect is reversed for a portion of the length of the device. adjacent its downstream

end.

2. (original) A device as claimed in claim 1 in which the electro-optic material is uniform

apart from a single discontinuity at which its crystal domain structure is inverted.

3. (original) A device as claimed in claim 1 in which the electro-optic material is uniform

apart from a single such discontinuity at which its poling is inverted.

4. (withdrawn) A device as claimed in claim 1 in which the electro-optic material is

entirely uniform and the discontinuity is imposed solely by a discontinuity in the design

of the electrodes.

5. (original) A device as claimed claim 1 in which the electro-optically active material is

selected from the group consisting of x-cut and z-cut lithium niobate, semiconductors,

poled polymers and poled glass.

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6. (original) A device as claimed claim 2 in which the electro-optically active material is selected from the group consisting of x-cut and z-cut lithium niobate, semiconductors, poled polymers and poled glass.

- 7. (original) A device as claimed claim 3 in which the electro-optically active material is selected from the group consisting of x-cut and z-cut lithium niobate, semiconductors, poled polymers and poled glass.
- 8. (original) A device in accordance with claim 1, being a modulator.
- 9. (original) A device in accordance with claim 1, being an optical switch.